



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,113	01/05/2004	Anna T. Riegel	54458-20001.00	1351
25227	7590	03/24/2006	EXAMINER	
MORRISON & FOERSTER LLP 1650 TYSONS BOULEVARD SUITE 300 MCLEAN, VA 22102			GODDARD, LAURA B	
		ART UNIT	PAPER NUMBER	
		1642		

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/751,113	RIEGEL ET AL.	
	Examiner	Art Unit	
	Laura B. Goddard, Ph.D.	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 05 January 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-53 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 1-53 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

Election/Restrictions

Upon review and reconsideration, the Election/Restriction requirement mailed 1/11/06 is hereby vacated and the new Election/Restriction requirement is set forth below.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17, drawn to an isolated **protein isoform** of an AIB1 transcriptional coactivator, classified in class 530, subclass 350.
- II. Claims 18-21, drawn to an isolated **nucleic sequence** that encodes a protein isoform of an AIB1 transcriptional coactivator, classified in class 536, subclass 23.1.
- III. Claims 22, 23, 26, 27, 34, 35, drawn to a diagnostic **kit** for the detection of cancer comprising chemical substances that are **specifically reactive to a protein isoform** of an AIB1 transcriptional coactivator, an **antibody** that is specifically reactive to a protein isoform of an AIB1 transcriptional coactivator, and a **pharmaceutical composition** comprising an agent that specifically binds to a protein isoform of an AIB1 transcriptional coactivator, classified in class 530, subclass 387.1.

- IV. Claims 24, 25, 28, drawn to a diagnostic **kit** for the detection of cancer comprising chemical substances that are **specifically reactive to a nucleic acid** that encodes a protein isoform of an AIB1 transcriptional coactivator and a **nucleic acid that hybridizes** to said nucleic acid, classified in class 536, subclass 23.1.
- V. Claims 29, 30, drawn to a method for detection of cancer in a patient comprising contacting a biological sample from a patient with chemical substances that **specifically bind to a protein** isoform of an AIB1, classified in class 435, subclass 7.1.
- VI. Claims 31, 32, 33, drawn to a method for **detection of cancer** in a patient comprising contacting a biological sample from a patient with chemical substances that **specifically bind to a nucleic acid** that encodes a protein isoform of an AIB1, classified in class 435, subclass 6.
- VII. Claims 36-46, drawn to an **siRNA** that inhibits expression of a transcriptional coactivator protein and pharmaceutical composition comprising said siRNA, classified in class 536, subclass 24.5.

Art Unit: 1642

VIII. Claims 47-50, drawn to a method for **treating or preventing a tumor** comprising administering to a patient a pharmaceutical composition comprising an siRNA that inhibits expression of a transcriptional coactivator protein, classified in class 514, subclass 44.

IX. Claims 51-53, drawn to a **transgenic animal** comprising a recombinant gene that encodes a protein isoform of an AIB1 transcriptional coactivator and method of creating the transgenic animal, classified in class 800, subclass 2, 18, 21.

The inventions are distinct, each from the other because of the following reasons:

The DNA of Group II is related to the protein of Group I by virtue of the fact that the DNA codes for the protein. The DNA molecule has utility for the recombinant production of the protein in a host cell. Although the DNA and the protein are related, since the DNA encodes the specifically claimed protein, they are distinct inventions because the protein product can be made by other and materially distinct processes, such as purification from the natural source. Further, DNA can be used for processes other than the production of protein, such as nucleic acid hybridization assays.

Furthermore, searching the inventions of Groups II and I together would impose a serious search burden. In the instant case, the search of the polypeptides and polynucleotides are not coextensive. The inventions of Groups II and I have a separate

Art Unit: 1642

status in the art as shown by their different classifications. In cases such as this one where descriptive sequence information is provided, the sequences are searched in appropriate database. There is search burden also in the non-patent literature. Prior to the concomitant isolation and expression of the sequences of interest there may be journal articles devoted solely to polypeptides which would not have described the polynucleotide. Similarly, there may have been "classical" genetics papers which had no knowledge of the polypeptide but spoke to the gene. Searching, therefore is not coextensive. This search requires an extensive analysis of the art retrieved in a sequence search and will require an in-depth analysis of technical literature. The scope of polynucleotides as claimed extend beyond the polynucleotide that encodes the claimed polypeptides as explained above: furthermore, a search of the nucleic acid molecules of Group II would require an oligonucleotide search, which is not likely to result in relevant art with respect to the polypeptide of Groups I. As such, it would be burdensome to search the inventions of Groups II and I.

The polypeptide of Group I and the antibody of Group III are patentably distinct for the following reasons:

While the inventions of both Groups I and Group III are polypeptides, in this instance the polypeptides of Groups I represent various proposed cell cycling protein, whereas the polypeptide of Group VIII encompasses antibodies including IgG which comprises 2 heavy and 2 light chains containing constant and variable regions, and including framework regions which act as a scaffold for the 6 complementarily

Art Unit: 1642

determining regions (CDR) that function to bind an epitope. Thus the polypeptides of Groups I-VI and the antibodies of Group III are structurally distinct molecules; any relationship between a polypeptide of Groups I and an antibody of Group III is dependent upon the correlation between the scope of the polypeptides that the antibody binds and the scope of the antibodies that would be generated upon immunization with the polypeptide.

In this case, the polypeptides of Groups I encompass large molecules which contain potentially hundreds of regions to which an antibody may bind, whereas the antibody of Group III is defined in terms of its binding specificity to a small structure within the sequences encompassed by Groups I. Furthermore, searching the inventions of Groups I and Group III would impose a serious search burden. The inventions have separate status in the art as shown by their different classifications. A polypeptide and an antibody which binds to the polypeptide require different searches. An amino acid sequence search of the full-length protein is necessary for a determination of novelty and unobviousness of the protein. However, such a search is not required to identify the antibodies of Group III. Furthermore, antibodies which bind to an epitope of a polypeptide of Groups I may be known even if a polypeptide of Groups I is novel. In addition, the technical literature search for the polypeptide of Group I and the antibody of Group III are not coextensive, e.g., antibodies may be characterized in the technical literature prior to discovery of or sequence of their binding target.

The polynucleotide of Group II and the antibody of Group III are patentably distinct for the following reasons:

Art Unit: 1642

The antibody of Group III includes, for example, IgG molecules which comprise 2 heavy and 2 light chains containing constant and variable regions, and including framework regions which act as a scaffold for the 6 complementarily determining regions (CDRs). Polypeptides, such as the antibody of Group III which are composed of amino acids, and polynucleotides, which are composed of nucleic acids, are structurally distinct molecules; any relationship between a polynucleotide and polypeptide is dependent upon the information provided by nucleic acid sequence open reading frame as it corresponds to the primary amino acid sequence of the encoded polypeptide. In the present claims, a polynucleotide of Group II will not encode an antibody of Group III, and the antibody of Group III cannot be encoded by a polynucleotide of Group II. Therefore, the antibody and polynucleotide are patentably distinct. The antibody and polynucleotide inventions have a separate status in the art as shown by their different classifications. Furthermore, searching the inventions of Group II and Group III would impose a serious search burden since a search of the polynucleotides of Group II would not be used to determine the patentability of any antibody of Group III, and vice-versa.

The polynucleotide of Groups IV and VII do not encode the polypeptide of Groups I and III, are structurally and functionally distinct from the polypeptides of Groups I and III, and would be burdensome to search together with the polypeptides of Group I and III for the reasons set forth above. The polynucleotides of Groups IV and VII do not share the same sequence, structure, or function of the polynucleotide of Group II or with each other. Therefore, a search of the polynucleotides of Groups IV,

Art Unit: 1642

VII, and II would not be coextensive with each other, and would be burdensome to search together.

The transgenic animal of Group IX does not use the polypeptide of Groups I and III, nor the polynucleotides of Groups IV and VII. The animal of Group IX is related to the polynucleotide of Group II by virtue of the fact that it comprises the polynucleotide. A search for an animal comprising said polynucleotide is not likely to result in relevant art with respect to the polynucleotide and vice versa. The inventions have separate status in the art as shown by their different classifications. Searching, therefore is not coextensive and would be burdensome to search together.

Inventions III and V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the antibody of Group III could be used in affinity chromatography or to produce anti-idiotypic antibodies.

Inventions IV and VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the

Art Unit: 1642

polynucleotide of Group IV could be used in affinity chromatography or to produce a protein.

Inventions VII and VIII are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the siRNA of Group VII could be used in affinity chromatography or hybridization assays.

The inventions of Groups V, VI and VIII are materially distinct methods which differ at least in objectives, method steps and reagents. For example, Groups V and VI are drawn to a method of detecting cancer from a patient *in vitro*, however each group utilizes different reagents and method steps to detect structurally and functionally different protein or polynucleotide molecules. Group VIII is drawn to the different objective of treating or preventing a tumor comprising administering an siRNA to a patient *in vivo*. Each of the groups employs chemically distinct reagents to accomplish different objectives that comprise different method steps. Searching all of the groups with all of the different objectives, method steps, and reagents would invoke a high burden of search.

The products of Groups I, II, IV, VII, and IX are not used in the method of Group V. The products of Groups I, III, II, VII, and IX are not used in the method of Group VI. The products of Groups I-IV, and IX are not used in the method of Group VIII.

Art Unit: 1642

Because these inventions are distinct for the reasons given above and the search required for one Group is not required for any other Group, and because some Groups have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

SPECIES ELECTION

Species election for Group I

A. This application contains claims directed to the following patentably distinct, structurally and functionally different **nuclear receptor** species of the claimed invention: **bile acid receptor, peroxidone proliferators receptor, retinoid receptor, steroid receptor, thyroid receptor, or vitamin D receptor** (claim 5).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic. **Claim 6 will be examined as drawn to the elected species. See species election below.**

B. This application contains claims directed to the following patentably distinct, functionally different **isoform expression** species of the claimed invention: **wherein the isoform of claim 1 is over expressed in a cancerous tissue** (claim 11), or **wherein the isoform of claim 1 is under expressed in a cancerous tissue** (claim 12).

Art Unit: 1642

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic. **Claim 13 will be examined as drawn to the elected species. See species election below.**

C. This application contains claims directed to the following patentably distinct, **deletion species** that result in a structurally and functionally different isoform of the claimed invention:

- (a) **all or significant portions of exon 3** (claim 15)
- (b) **bHLH** (claim 17)
- (c) **PAS A** (claim 17)
- (e) **PAS B** (claim 17)
- (f) **RID** (claim 17)
- (g) **CID** (claim 17)
- (h) **the exons of wild-type AIB1** (claim 17); or
- (i) **a specified combination of binding domains listed in (b)-(h)** (claim 17).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 1 is generic.

Species election for Group VII

Applicant must elect a species from D and E below:

Art Unit: 1642

D. This application contains claims directed to the following patentably distinct, structurally and functionally different **coactivator protein** species of the claimed invention: **Src-1, Src-2, Src-3** (claim 37).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 36 is generic.

E. This application contains claims directed to the following patentably distinct, structurally and functionally different **binding domain** species of the claimed invention: **bHLH, PAS A, PAS B, RID, CID, or a specified combination of binding domains listed** (claim 41).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 36 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include

Art Unit: 1642

all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Note:

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. Process claims that depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to

Art Unit: 1642

rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura B. Goddard, Ph.D. whose telephone number is (571) 272-8788. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1642

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura B Goddard, Ph.D.
Examiner
Art Unit 1642

Gary B. Nickol

GARY B. NICKOL, PH.D.
PRIMARY EXAMINER